

We Claim:

1. An electronic system for use on a remote gas or oil well-site to detect and identify gas present in the atmosphere of said well-site and transmit to a location off-site data respecting the gas so identified for the purpose of warning operators of the well-site of the presence of said gas, the system comprising:

at least one sensor means to detect, and generate raw data respecting, at least one noxious gas present in said well-site atmosphere;

means to process said raw data and identify each noxious gas so detected;

a central communication interface for electronically receiving raw data respecting each said noxious gas from each said sensor means, and for transmitting off-site over the Internet processed data respecting each said noxious gas so identified;

wireless local means, for each said means to identify each said noxious gas, to communicate to said central communication interface said raw data respecting each said noxious gas;

at least one wireless long-distance means for transmitting off-site over the Internet said processed data respecting each said noxious gas so identified; and

a portable source of electrical power for supplying said central communication interface.

2. The system as claimed in claim 1 further comprising means for sensing atmospheric conditions that cause anomalous output from said sensor means to detect, and generate raw data respecting, at least one noxious gas present in said well-site atmosphere.

3. The system as claimed in claim 1 further comprising any suitable camera, video transmitter and video server device for capturing and compressing digital images together with suitable switching means, for transmission using said wireless long-distance means for transmitting off-site over the Internet.

4. The system as claimed in claim 1 further comprising voice communication means integrated with at least one of said at least one wireless long-distance means.

5. The system as claimed in claim 1 further comprising means for detecting the presence and relative signal strength of each of said at least one wireless long-distance means and based thereon for selecting one of said at least one wireless long-distance means.
6. The system as claimed in claim 1 further comprising means for automatically switching between said at least one wireless long-distance means for transmitting off-site over the Internet.
7. The system as claimed in claim 1 wherein said location off-site comprises an Internet serving call centre for recording, reprocessing, forwarding, viewing, archiving and otherwise handling said processed data respecting each said noxious gas so identified.
8. The system as claimed in claim 1 wherein said location off-site comprises an IP address specified by a user of said system.
9. The system as claimed in claim 1 wherein said means to process said raw data and identify each noxious gas so detected, includes means for storing and processing said raw data for the purpose of creating and maintaining a data log respecting the nature and presence or concentration of at least one noxious gas over time.
10. The system as claimed in claim 1 wherein said source of electrical power comprises at least one battery together with solar powered means for charging said at least one battery.
11. The system as claimed in claim 1 wherein said at least one sensor means comprises means for detecting the percentage of the Lower Explosive Limit ("LEL") level of a flammable gas in the atmosphere of said well site.
12. The system as claimed in claim 1 further wherein said wireless local means comprises a communications relay apparatus that operates at low power within the Radio Frequency portion of the electromagnetic spectrum at any suitable frequency therein.

13. The system as claimed in claim 1 wherein said wireless long-distance means for transmitting off-site over the Internet comprises a modem adaptable to transmitting through a Cellular Digital Packet Data network using Internet protocol via any suitable router or similar device.
14. The system as claimed in claim 1 wherein said wireless long-distance means for transmitting off-site over the Internet comprises a satellite transponder accessing a satellite network using Internet protocol via any suitable router or similar device.
15. The method as claimed in claim 14 wherein said satellite transponder comprises a Globalstar transponder.
16. The system as claimed in claim 1 wherein said sensor means detects the ppm of H_2S or the ppb of SO_2 in the atmosphere adjacent said well site.
17. The system as claimed in claim 1 further comprising an intrinsically safe housing.
18. A method of initializing a system having a central communication interface, for use with means for gas detection and analysis, comprising the steps:
 - apply power to said central communication interface;
 - verify communications between said central communication interface and all sensor means;
 - test each sensor means using bump gas means to send each sensor to alarm;
 - physically chart the sensor readings; and
 - use integrated voice phone means to confirm the accuracy of said readings.